ABSTRACT

A system for adjusting the light (EMR) input into optical fibers comprising a set of "parasitic" optical fibers randomly distributed among a bundle of transmitting fibers. The parasitic fibers are joined by a separate ferrule from the transmitting fibers and are not connected to an EMR source. As a result, the parasitic fibers pick up and transmit light that is lost from the transmitting fibers for detection by a sensor that determines the amount of light being output from these parasitic fibers and, therefore, the amount of light transmitted by the fiber bundle that is subject to variation, such as variation in the intensity of the light source. Based on factors such as the ratio of parasitic fibers to transmitting fibers and the length of the fibers, the level of light output by the parasitic fibers to the detector determines whether the light (EMR) source needs to be adjusted to maintain a steady output from the transmitting fibers. Based using a convention feed-back circuit, the level of light input into the transmitting fibers is adjusted to maintain a relatively constant output by the transmitting fibers.